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## ABSTRACT

The National Assessment of Educational Progress (NAEP) was created in 1969, and its goals were twofold: to make available the first comprehensive data on the educational attainments of young Americans in 10 learning areas and to measure any growth or decline that takes place in the educational attainments of young Americans. In 7 of the 10 learning areas surveyed nationally reading, writing, science, music, citizenship, social studies and literature-achievement levels for the poor, the black, those who live in the inner city, in rural communities or the Southeast fall consistently below that of the nation as a whole. Young people who live in the Northeast or in suburban communities, or whose parents had the advantage of post-high school education, consistently demonstrated higher levels of skills and knowledge than the nation as a whole. The remainder of the report is concerned with the assessment of NAEP findings by educators, federal agencies and NAEP, research applications, aiding state efforts, NAEP and local school districts, teacher training and NAEP, and the present and future of NAEP.

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## NATIONAL ASSESSMENT ACHIEVEMENTS Findings, Interpretations and Uses

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## Preface

When annual public expenditures for education soared past the \$30 billion mark in the early 1960's, taxpayers, educators, state legislators and the Congress began asking about the effectiveness of increased funding. Had it helped increase pupil achievement? Had the money been spent on the right things? Had the expenditure been large enough?

To help answer these questions, the National Assessment of Educational Progress (NAEP) was created in 1969. Its goals are two-fold:

- To make available the first comprehensive data on the educational attainments of young Americans in 10 learning areas;
- To measure any growth or decline that takes place in the educational attainments of young Americans.

The information provided by the national assessment project is proving useful to educators and policymakers in several ways. The data NAEP gathers describes educational strengths and weaknesses, identifies pockets of educational disadvantage in the nation and provides information for measuring the effects of federal education programs. In addition, NAEP makes its methods and materials available for application in a wide variety of evaluation needs.

The project is financed by the U.S. Office of Education and managed by the Education Commission of the States (ECS), a coalition of governors, educators and legislators from 45 states, the Virgin Islands and Puerto Rico. ECS's purpose is to promote cooperative action in improving education at all levels—preschool through postsecondary.

—Gaye Vandermyn

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# National Achievement Patterns

The educational achievement of young Americans who are poor or black, who live in the inner city, in rural communities or in the Southeast lags behind national levels in a broad range of subjects traditionally taught in the nation's schools.

That observation, often voiced by educators as an "informed opinion," has been documented by the largest, most ambitious educational survey project in the nation, the National Assessment of Educational Progress (NAEP). Results of the assessment surveys also reveal the size of the achievement gap.

In seven of the 10 learning areas surveyed nationally by the project—reading, writing, science, music, citizenship, social studies and literature—achievement levels for these groups fall consistently below that of the nation as a whole. In contrast, young people who live in the Northeast or in suburban communities, or whose parents had the advantage of post-high school education, consistently demonstrate higher levels of skills and knowledge than the nation as a whole. That achievement pattern is illustrated in the graphs showing achievement levels for groups of 17-year-olds (Figs. 1-4). The pattern also holds true at the other three age levels assessed: ages 9, 13 and 26-35.

Results of the mathematics assessment will be released in 1974-75 and the art and career and occupational development survey findings in 1975-76.

Nearly a half million young Americans have participated in the assessment project over the past five years. By 1975, they will have completed test questions and exercises in all 10 learning areas. Since this is the first national data of this type gathered, educators and policymakers are evaluating the findings to determine whether these national achievement levels are satisfactory.

What is obviously unsatisfactory to the American ideal of equal outcomes from equal educational opportunity is the relationship between poor achievement and socioeconomic influences.

Initial assessment results reveal, more accurately than any previous kind of survey, what achievement levels exist.

Some examples of the kinds of information NAEP has provided in the seven subject areas assessed so far:

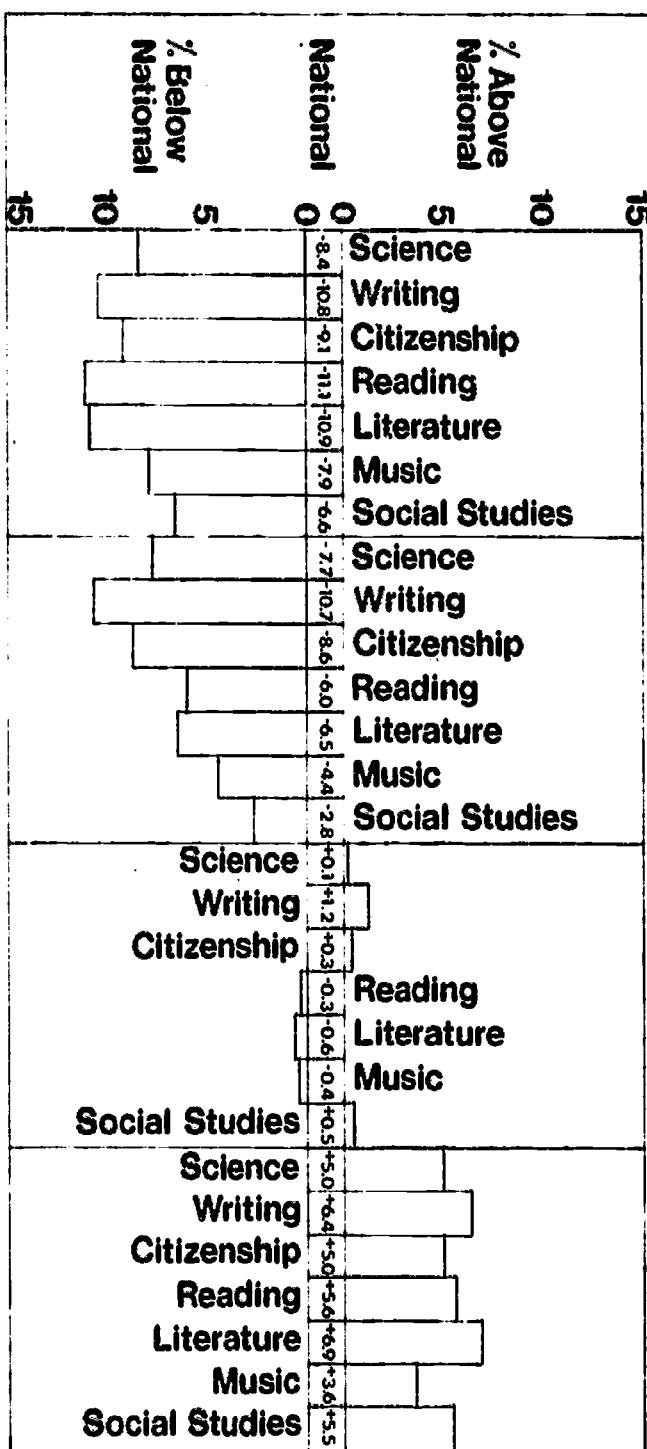
## Social Studies (1971-72)

Young Americans lack knowledge of the fundamentals of politics and civil rights. Only 41 and 44 per cent of the nation's 17-year-olds and young adults can accurately read all parts of a ballot. Only 17 per cent of the 13-year-olds, 49 per cent of the 17-year-olds and 60 per

**FIGURE 1: Educational Achievement  
of 17-Year-Olds: Parental Education**

**LEVEL OF PARENTS' EDUCATION**

No H.S.      Some H.S.      Grad. H.S.      Post H.S.



cent of the adults know that the presidential candidate for each political party is formally nominated at a national convention. Many young people express reservations about granting constitutional rights when faced with specific circumstances. Relatively few young Americans can read and interpret graphs, maps or tables. They demonstrate little knowledge of the contributions of minority groups to American culture and history.

### **Citizenship (1969-70)**

An overwhelming majority of 17-year-olds (77 per cent) and young adults (86 per cent) know one or more ways citizens can influence the actions of their state government. A rough indicator of how well informed young people are about what is happening currently in government, results show that only 15 per cent of the 17-year-olds can name their U.S. senators; 31 per cent know the name of the congressman from their district; 7 per cent can name the secretary of state. (At the time of the assessment, William Rogers was secretary of state.) Of the young adults, 31 per cent can name both senators from their state; 39 per cent know who their congressmen are; 16 per cent can name the secretary of state. The vast majority of 17-year-olds (88 per cent) and young adults (95 per cent) can name the two major political parties, but substantially fewer (41 per cent and 54 per cent) can name a third party.

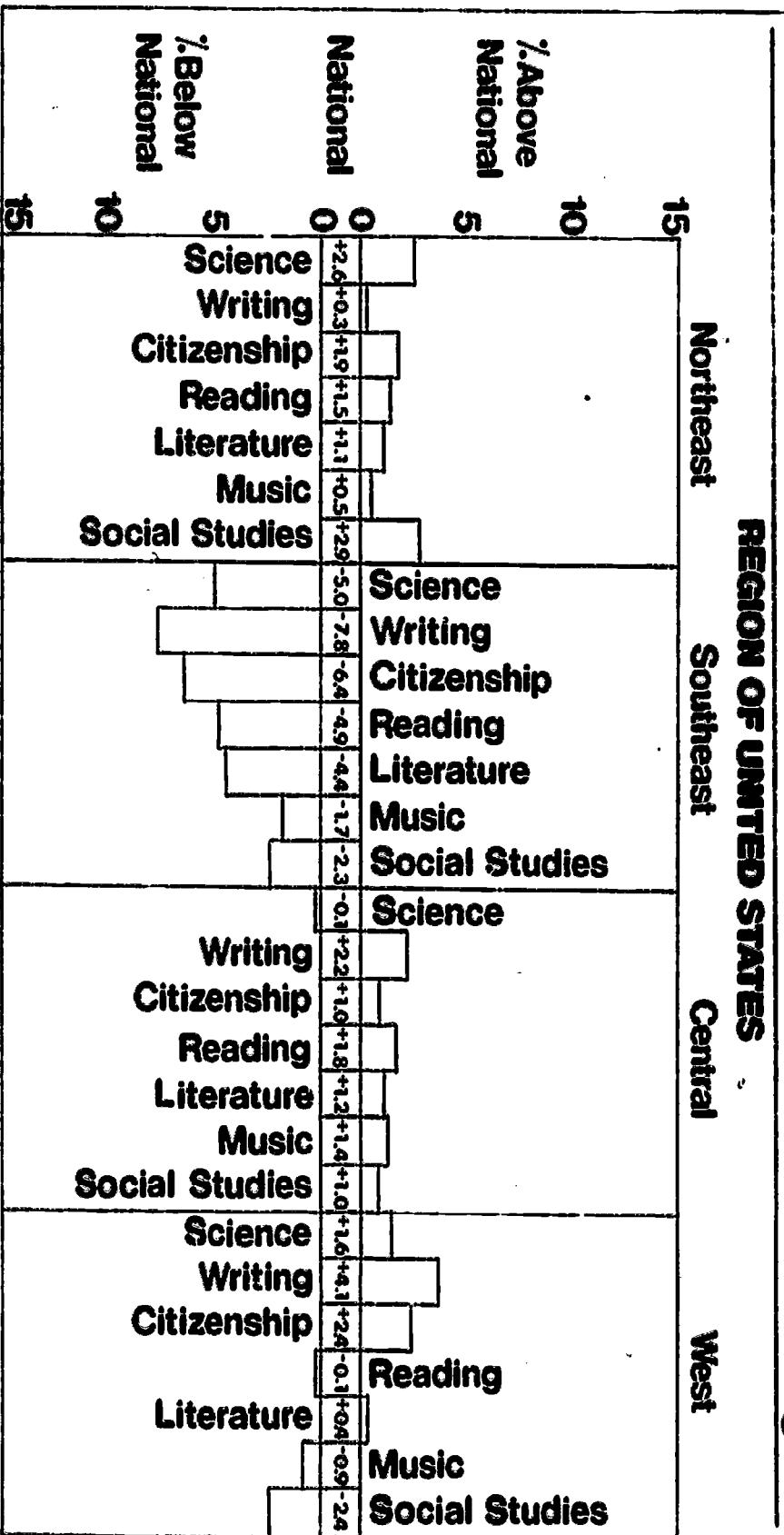
### **Science (1969-70)**

Males show an advantage in science at all ages. At age 9, male overall performance is only 1.8 per cent above females, but at age 13, males are 2.9 per cent above females; at age 17, 5 per cent above females; and between the ages of 26 and 35, 9.9 per cent above females. At all four age levels, males demonstrate a more thorough knowledge of physical science, and women seem to have a better knowledge of biological science. This trend is particularly apparent at the adult level where women appear to know a good deal more about human reproduction. Black Americans demonstrate the lowest science achievement of all groups reported. They are, overall, 15 percentage points below the nation.

### **Reading (1970-71)**

Most Americans read well enough to accomplish simple, practical kinds of tasks. Results do support stereotypes and suppositions many people have about good and poor readers. The overall reading ability of blacks, for instance, is lower than for any other group in the survey. School-age males read less well than school-age females, but adult men and women have about the same reading abilities. People who come from families where neither parent has gone to high school

**FIGURE 2: Educational Achievement of 17-Year-Olds: Region**



and people from inner city areas read less well than most other groups of people.

### **Writing (1969-70)**

Males are more adventurous and free in writing essays, although females demonstrate a better command of skills. Mastery of basic skills, such as punctuation and spelling, improves from age 9 to 13 to 17 to young adult. Application blanks may be a common writing task for Americans, but results show 61 per cent of the 17-year-olds and 50 per cent of the young adults actually fill in all information required.

### **Literature (1970-71)**

Seventeen-year-olds overwhelmingly believe the study of literature is a positive experience. Ninety per cent believe literature should be part of every high school curriculum. About 10 per cent believe the study of literature increases one's tolerance for new and different ideas. Responses to literary works vary, depending upon the age and sex of the student as well as the kind of work he or she is reading. Girls write better essays about literature than do boys. Inner city students seem to respond more completely to works that relate to their experiences or surroundings.

### **Music (1971-72)**

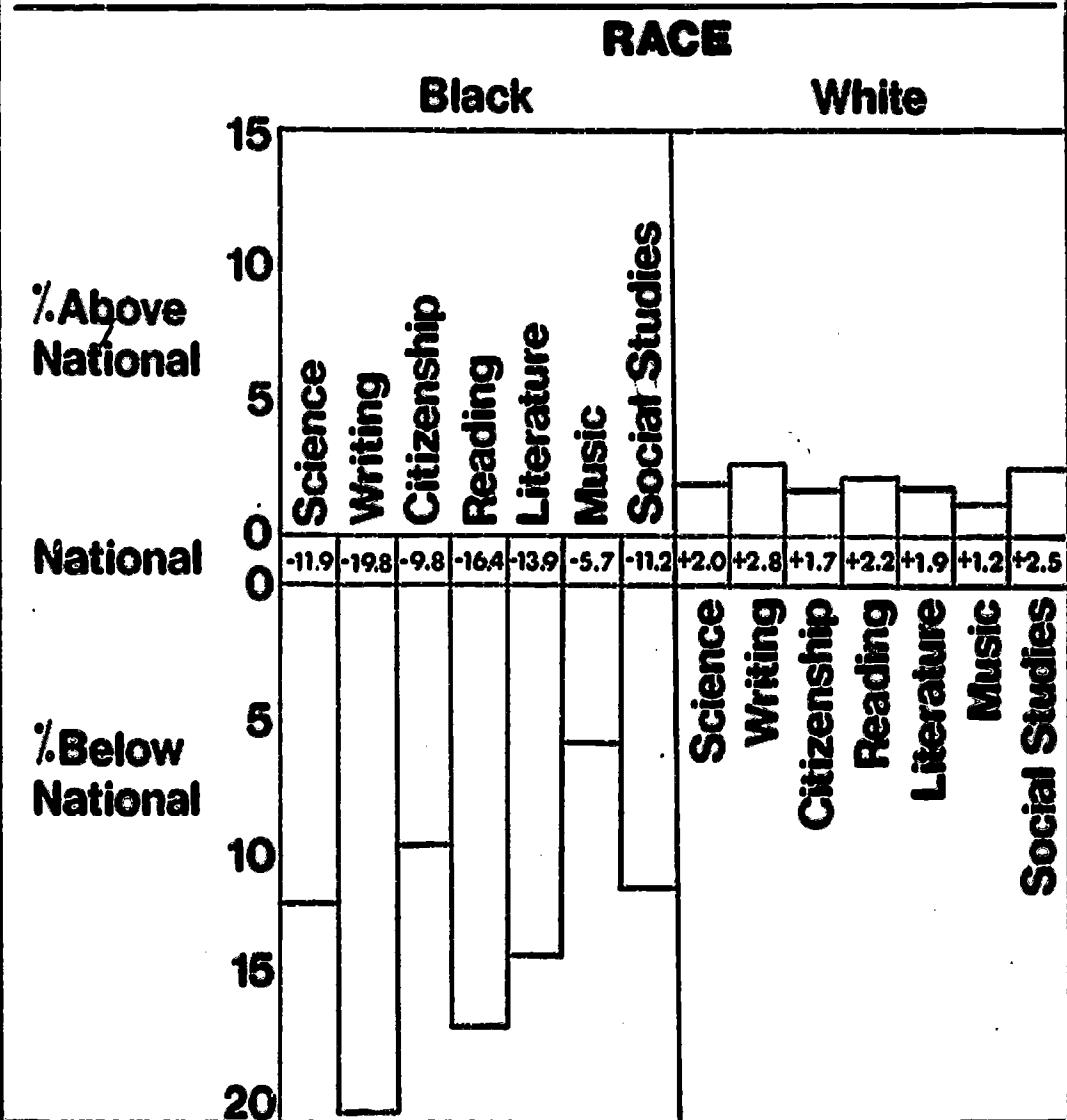
Individuals at all ages are interested in and like music. Over 80 per cent of all age groups either play or would like to learn to play a musical instrument. Far fewer individuals can actually play an instrument, however. Data on other music performance skills show that less than 15 per cent of any age group can sight read even the simplest line of music. Judged on their ability to maintain pitch and rhythm and hit the right notes, fewer than half of the nation's youth can give an acceptable vocal performance of their own choosing. Black Americans demonstrate a greater ability to repeat rhythmic patterns than do whites. Black 9-, 13- and 17-year-olds score 7 to 8 percentage points above whites when repeating and improvising rhythmic patterns.

Successive assessments will show whether progress is made in bringing educationally disadvantaged groups up to national levels and whether national achievement levels are maintained, improved or lowered.

### **Second Science Assessment (1972-73)**

The second assessment of science provides the first information of this type ever available to the education community and policymakers. A detailed report comparing 1969-70 science assessment results with the 1972-73 survey findings will be available in early 1975. Highlights of the findings, available now, show that:

## **FIGURE 3: Educational Achievement of 17-Year-Olds: Race**



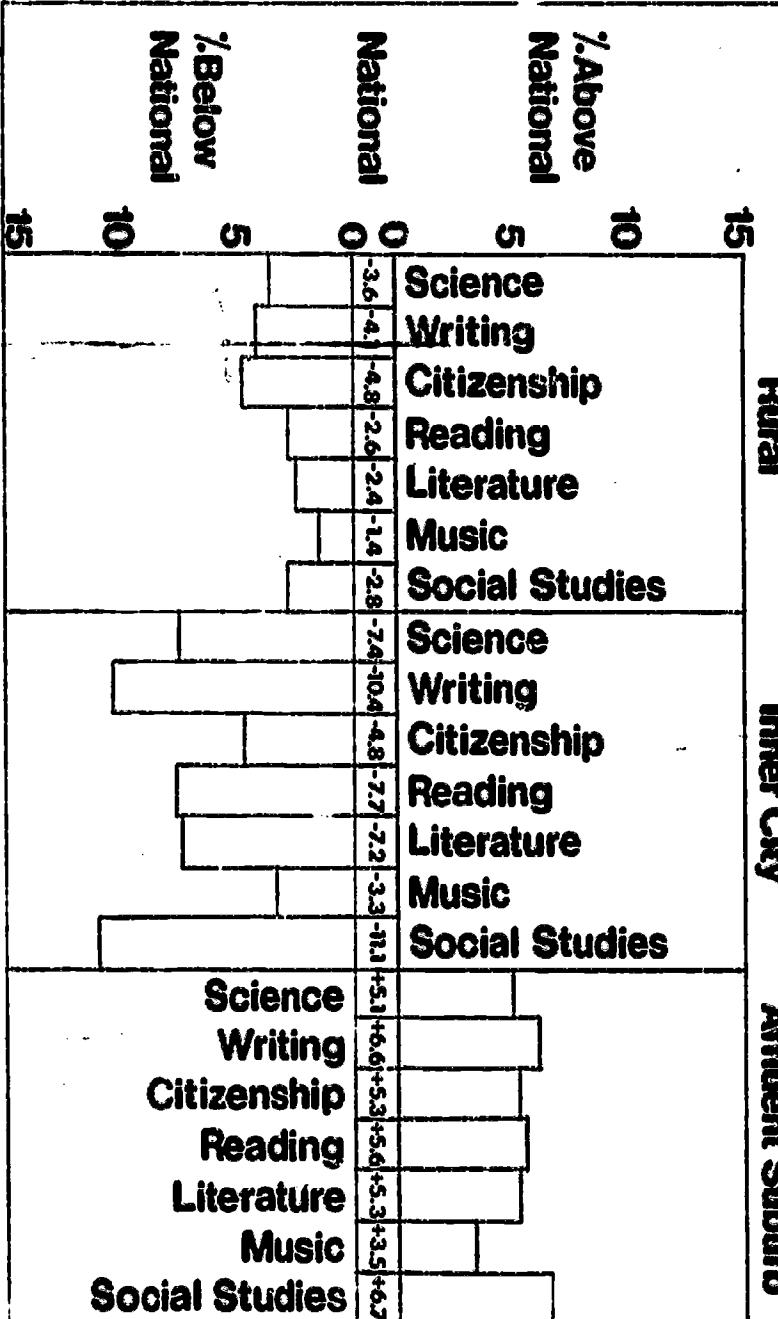
- On most exercises measuring science knowledge and skills, achievement declined at all three school ages assessed—9, 13 and 17 years;
- On exercises used at ages 9, 13 and 17 in both assessments, national performance improved on about one-third of the exercises and declined on about two-thirds of the exercises;
- At the three school-age levels, size of the decline in overall performance was between one and two percentage points, enough of a drop to fall outside the margin of error allowed in the statistical analysis of the assessment results.

Three low-achieving groups improved their standing relative to the nation. Relative performance of Southerners at all three school ages improved on at least two-thirds of the exercises, bringing this group a little closer to national achievement levels. Likewise, 9-, 13- and 17-year-olds attending rural schools improved their overall performance, relative to the nation, by approximately three to four percentage points. In general, however, rural respondents still performed below the nation as a whole. Inner city 9- and 13-year-olds also gained on the national achievement level in science, showing an overall improvement relative to the nation of about one percentage point. Inner city respondents still performed generally below the nation.

Black 9-year-olds maintained the achievement levels established in the first science assessment, black 13-year-olds lost ground slightly and black 17-year-olds gained slightly. Blacks still showed an overall deficit of between 11 and 16 percentage points below the national level.

**FIGURE 4: Educational Achievement  
of 17-Year-Olds: Size and Type of Community**

**SIZE AND TYPE OF COMMUNITY**



## Educators Assess NAEP Findings

After the release of the first assessment results in science, reading, social studies and music, NAEP invited appropriate professional education groups to use the project's technical and consulting services to evaluate assessment findings. Two such cooperative efforts, with the National Council of Social Studies (NCSS) and the National Science Teachers Association (NSTA), involved long-term formal study projects. The professional educators have evaluated the significance of the survey results, identified curriculum strengths and weaknesses, recommended instructional changes and compared actual performance levels with desirable performance standards as estimated by subject-area specialists.

Working cooperatively with—and under a grant from—NAEP, NCSS assigned a team of experts to examine the assessment and interpret the data for social studies educators and curriculum planners. In one aspect of the study, comparisons between actual assessment results and satisfactory performance levels set by a panel of social studies experts give cause for concern. Actual assessment results show a consistently lower level of understanding than the NCSS panel members considered satisfactory. Figure 5 illustrates the discrepancy between what the experts judged would be satisfactory and actual achievement on seven exercises dealing with knowledge and attitudes about selected political and social issues. For example, although the panel believed that at least 80 per cent of the young adults should understand the nomination procedure for presidential candidates, only 60 per cent actually did so.

The May 1974 issue of *Social Education*, official journal of NCSS, is devoted largely to reporting on the NCSS interpretive effort. Jean Fair, professor of education at Wayne State University, writing in that issue, states, ". . . typical performance on citizenship exercises of school-age young people (ages 9, 13 and 17) in school communities categorized as inner city is below the nation as a whole; the typical performance of such young people is above in school communities categorized as affluent suburb. That few of us are surprised makes the statement no less significant. Attention must be paid. The complexity of the problems does not justify sweeping them under the rug. True, composite (single) scores do obscure. Performance levels reported in the data are uneven; on some few exercises inner city young do as well or better than the nation as a whole while the affluent suburban occasionally falls below. Study of the 'type of community' evidence points to areas of needed and overdue educational effort. That large propor-

## FIGURE 5: What Young Americans Don't Know About the Political Process

	Age 13		Age 17		Adult	
	NAEP Results	Panel Opinion	NAEP Results	Panel Opinion	NAEP Results	Panel Opinion
Known, Understood or Supported						
Nomination procedure for presidential candidates	17%	41-60%	49%	88%+	68%	88%+
How to use a simple ballot	-	-	41%	88%+	44%	88%+
How and where to get information about political candidates	42%	61-80%	62%	88%	69%	88%+
The U.S. Supreme Court has the power to declare acts of Congress unconstitutional	35%	41-60%	71%	88%+	62%	61-88%
Religious freedom for elected officials	59%	88%+	63%	88%+	56%	88%+
Open housing	-	-	88%	88%+	63%	88%+
Equal employment opportunity	74%	88%+	98%	88%+	90%	88%+

tions of inner city young people are members of minority groups simply adds to the urgency of the need. Unless there is reason to believe otherwise, the proper questions are why and what to do."

NCSS is scheduled to publish the full report of its assessment study by the fall of 1974. It is expected to include a more detailed analysis of assessment findings, exercises and objectives as well as recommendations for improving social studies education.

## Science

In science, the NSTA study team found that the national achievement levels revealed in the first assessment, on the whole, tended to match or exceed their estimates of satisfactory performance. However, the NSTA report expressed concern over the relatively low-achievement levels of females, blacks, rural, inner city and Southeastern residents in all areas of the science assessment.

In the NSTA report, major recommendations for correcting educational inequities and curriculum weaknesses included the following:

- NSTA should appoint a committee to identify factors that may be restricting the science achievement of women;
- Schools should provide sex education. (The poor performance of 17-year-olds and young adults, especially, on those exercises assessing sex education indicate that "parents may not know enough about sex education to be competent teachers of their children in this area," the NSTA report contends.);
- Teachers should take a hard look at science curriculum content priorities and instructional methods to improve retention of the most important scientific principles and information;
- Teachers should carefully evaluate their methods and attitudes to make sure these do not discriminate against blacks, females and poor students.

Copies of the abridged report appeared in *The Science Teacher*, *Science and Children* and *Journal of College Science Teaching*. Unabridged copies are available from NSTA.

## Reading and Music

NAEP's cooperation with reading and music education specialists was slightly different. Reading specialists from around the country were invited to a workshop-symposium at the Denver headquarters of the project. They were asked to review the manuscript of a reading assessment report, analyze the significance of the findings, suggest possible causes for the achievement patterns revealed and ways in which inequities and deficiencies might be corrected. Their conclusions were published in a report, *Recipes, Wrappers, Reasoning and*

*Rate: A Digest of the First Reading Assessment*, which is available through the Superintendent of Documents, U. S. Government Printing Office.

Upon the release of the results of the first music assessment, the first objective information ever available to music educators on student achievement, the Music Educators National Conference (MENC) accepted NAEP's invitation to study the survey results and their implications for music education in the nation's schools. A MENC panel provided the perspective needed to interpret the music assessment results. Copies of its analysis, *A Perspective on the First Music Assessment*, also are available through the Superintendent of Documents, U. S. Government Printing Office.

## Federal Agencies and NAEP

During the 1973-74 school year, NAEP conducted a "miniassessment" of functional literacy skills for the U.S. Office of Education's Right to Read program. Unlike previous literacy studies which are based on a grade-level reading ability or number of years of schooling, the miniassessment will test specific literacy skills of 5,200 17-year-olds. This assessment will be conducted again in 1974-75 and 1975-76. The Right to Read office developed a definition of literacy based on mastery of skills and knowledges needed to function in modern society. Using that as the criterion, Right to Read selected appropriate exercises for the miniassessment from those developed by NAEP in its regular reading assessment. Right to Read plans to use data collected by NAEP over a three-year period to gauge progress toward its goal of eliminating illiteracy by 1980 and to identify specific curriculum areas and programs that need strengthening.

Recommendations on how best to use Emergency School Aid Act allocations to improve the academic achievement of minority group students could be based, in part, on a special analysis of NAEP results. A special study, now under way, was requested by the National Advisory Council on Equality of Educational Opportunity to assist it in formulating recommendations to the assistant secretary of education. The council is charged with advising the assistant secretary on kinds of programs that are most likely to accomplish successfully the goals of the Emergency School Aid Act.

The analysis will compare achievement levels exhibited among groups of black students from different backgrounds in the annual surveys. In addition, it will provide performance data by both race and sex at each age on items that assess functional knowledge levels. Further requests for special analyses are expected through 1975.

The federal Office of Management and Budget in its new publication, *Social Indicators—1973*, uses NAEP findings exclusively for its information on levels of educational achievement. These indicators are used to show, in a timely fashion, the status of the population in relation to a particular concern, according to the publication. The educational achievement levels graphically illustrate the size of the "edge" some population groups have over others in educational attainments.

## Research Applications

Educational research organizations and curriculum groups are also taking advantage of the survey methods, analysis techniques, educational objectives, exercises and findings pioneered by the NAEP project staff.

Florida State University, Tallahassee, under a National Science Foundation grant, is conducting a nationwide study of the effectiveness of a science curriculum approach called the Individualized Science Instruction Systems (ISIS). The evaluation project is using selected NAEP exercises to develop a measurement tool for its study. When the testing instrument is completed, the university will measure the level of science achievement mastered by high school students using the ISIS approach in seven areas in the United States.

Under a U.S. Office of Education grant, the Texas Education Agency in conjunction with the University of Texas at Austin completed a research effort aimed at identifying the specific knowledge, skills and abilities that distinguish the adult who can function successfully in modern society. Test items used to identify successful performance in the survey of 4,115 adult volunteers from 30 states included exercises developed and used by NAEP. Findings of the Adult Performance Level Study were published in January 1974 and are available from the University of Texas.

NAEP is currently cooperating with the Atlanta Assessment Project and the Atlanta, Ga., public schools on a unique educational survey. The purpose of the survey is to determine whether 17-year-olds, both students and nonstudents, are learning the minimum amount needed to cope with life in Atlanta as it is likely to be in 1985. Funded under the Elementary and Secondary Education Act (ESEA), Title III, Atlanta staff are studying the methods used by NAEP to measure attitudes and values, one of the most difficult areas in which to develop reliable measures.

The national assessment also has provided consultation, technical assistance and materials to an ESEA Title V program, the Cooperative Accountability Project. States engaged in the cooperative effort to refine state accountability systems are Colorado, Florida, Minnesota, Wisconsin, Michigan, Oregon and Maryland.

## Aiding State Efforts

NAEP has provided consulting services, technical assistance, assessment materials and or data to 28 states interested in developing their own state education evaluation programs. The nature of the service the project provides ranges from exploratory and planning sessions with state education officials, governors and legislators to providing special materials for state use.

In addition to assistance to individual state education agencies, NAEP annually sponsors a series of workshops on assessment methods which offer state officials an overview of the techniques and materials of large-scale assessment pioneered by the national assessment. The workshops also afford state officials the opportunity to share experiences in this relatively new field.

To help states develop greater expertise, NAEP also assisted six states in forming a new organization—the National Council for the Advancement of Educational Assessment—which will explore mutual assessment problems on a continuing basis. Charter members of the new group include representatives from California, Florida, New Jersey, New York, Pennsylvania and Texas.

Some states need no more than technical assistance with the methods of large-scale assessment. Others find that the full range of materials, data and services of the project can be economically adapted to fit their needs.

Minnesota is an example of a state that found it beneficial to adapt NAEP materials to its statewide evaluation and planning needs. In a study conducted in the spring of 1973, the state administered 100 reading exercises to 4,600 17-year-olds in the state. Twenty-six of these were NAEP exercises. Comparisons on these 26 exercises show that Minnesota 17-year-olds are better readers than their counterparts in the rest of the country. These results are only the beginning of a 10-year state assessment program that will measure achievement of three age groups in 10 subject areas. Exercises used in these surveys will again include NAEP exercises.

Connecticut, following its first statewide assessment in reading, was able to make direct comparisons between state and national levels of performance. Connecticut used this information to plan more effective use of state education resources. One outcome of that evaluation and planning effort was a new stress on urban reading programs. Connecticut will use NAEP exercises in a statewide science assessment in the fall of 1974.

Maine found, as a result of its first educational assessment of citizenship knowledge conducted in 1972, that the state's 17-year-olds in both private and public schools demonstrate more concern for

the well-being of others and the rights of individuals than their peers nationally. The Maine assessment program closely parallels the NAEP model. The first assessment of citizenship and writing skills is part of a 10-year program planned to give Maine education decisionmakers periodic progress checks on whether student performance is improving and what areas of the curriculum need strengthening. Carroll R. McGary, commissioner of the Maine State Department of Educational and Cultural Services, said that the state's first assessment had pinpointed two areas of civic education that need strengthening—better understanding of the application of constitutional freedoms and the development of practical skills of citizen participation in government.

Iowa used NAEP objectives and exercises in 1971 and 1972 to assess a statewide sample of students in three academic areas—science, reading and literature. The Iowa assessment was designed to find out how well state education objectives were being met. Iowa also uses NAEP materials in its continuing assessment service to local school districts. The state helps local school officials tailor assessment methods to local program evaluation needs.

States that have employed the national assessment model, materials or data in their own educational evaluation programs include:

Colorado	Louisiana	Ohio
Connecticut	Maine	Oregon
Hawaii	Maryland	Virginia
Illinois	Massachusetts	Wisconsin
Iowa	Minnesota	Wyoming

States that have used the project's consulting services to explore or start planning development of evaluation programs include:

Alabama	Florida	South Carolina
Arizona	Idaho	Texas
California	Michigan	Virgin Islands
Georgia	New Mexico	West Virginia
	North Carolina	

## **NAEP and Local School Districts**

Since its inception, NAEP has received more than 200 requests from local school districts that wish to take advantage of the findings of the project and the methods it has developed in their own evaluation and curriculum reform efforts.

One of the most thorough applications of the NAEP approach in a local district is the student writing demonstration project of Montgomery County, Md., public schools. School officials in this suburban Washington area were interested in comparing the writing skills of their 13- and 17-year-olds to other suburban children. By using NAEP materials and drawing on NAEP's assistance, they were able to carry out a districtwide miniassessment of writing that revealed their youngsters were performing above national levels in all but a few instances.

To stimulate the most effective use of assessment materials and methods, direct assistance to local school districts is based primarily on a "lighthouse" concept. At this point, at least 12 school districts that are either participating in a state assessment effort or have demonstrated the staff and funding capability for carrying out an effective program have received direct assistance from the NAEP staff. Since the NAEP staff is small, assistance to other districts has necessarily been limited to providing materials and written monographs about the project's methods, results and design.

Following is a brief description of four "lighthouse" school districts that demonstrate the kinds of impact the project has on local school programs.

### **San Bernardino, Calif.**

In 1972 the San Bernardino school system undertook a major evaluation of its curriculum offerings and goals. The \$300,000-project compared local curriculum objectives with the educational objectives developed for NAEP by panels of scholars, educators and interested citizens. The result was a total revision of local curriculum offerings and a new statement of educational goals. The San Bernardino effort illustrates the typical approach: adaptation of NAEP educational objectives to suit local values and needs rather than wholesale adoption.

### **Lincoln, Neb.**

Lincoln school officials recently asked themselves: What should we be teaching? It was an attempt to take a fresh hard look at the

education needs of their students. When they found their answers, they looked to NAEP for help in finding out how well they were achieving those educational goals. Although the local school district developed its own answers to the critical question of what should be taught, they found that a number of NAEP exercises reflected local district objectives. By selecting those exercises to use in their local evaluation program, Lincoln school officials were able to compare local student performance with national performance levels. Lincoln officials also took note of an added bonus: Because the district was able to duplicate the exercises and methods used by NAEP, they saved both time and money.

The evaluation program showed that Lincoln students' overall achievement is superior or equal to national levels with a few specific exceptions. And it's to these few exceptions that Lincoln teachers are now giving added emphasis in the instructional program.

### **Shawnee Mission, Kan.**

The Shawnee Mission school district encourages innovation but wants to make sure that innovation pays off in better student achievement. After school officials launched a new interdisciplinary curriculum project on American studies in 1973-74, they sought help from NAEP in developing means of evaluating its success. By incorporating social studies exercises used in the national surveys, the district hopes to gauge the comparative effectiveness of their new curriculum approach.

### **Milwaukee, Wis.**

Milwaukee education officials wanted to know how well students had mastered science subjects. To find out, the city used NAEP science exercises in a systemwide evaluation of science achievement in 1971. Milwaukee is using the information it gathered to plan curriculum approaches that will be effective in upgrading students' science achievement.

Other school districts that have begun planning or are using the NAEP approach or materials in local evaluation programs include:

- Jefferson County Public Schools, Colo.**
- Granite School District, Utah**
- Philadelphia Public Schools, Pa.**
- Denver Public Schools, Colo.**
- Chicago Public Schools, Ill.**
- San Diego Public Schools, Calif.**
- Columbia Public Schools, Mo.**

## **Teacher Training and NAEP**

Teacher training institutions across the country have started using NAEP materials in professional education courses. Approaches vary with the kind of course and the institution. Generally, courses dealing with educational evaluation include a study of NAEP's methods and materials; student teacher supervisors concentrate on studies of NAEP objectives and exercises; education methods courses compare educational objectives with the survey findings on student achievement.

Following are samples of such uses:

### **University of Houston, Texas**

The College of Education, University of Houston, uses NAEP data in its teacher education program that focuses on students' abilities to perform specific teaching skills successfully. Faculty, graduate students and seniors use the NAEP data for reference-based comparisons in learning methods.

The college language and reading faculty use NAEP exercises and objectives as a reference in developing objectives and exercises for use in their teacher-training courses. The department of curriculum and instruction examines NAEP methodology in a graduate course in teaching strategies. During the course of study, the class makes comparison studies of NAEP data in various subject areas.

### **Western Michigan University, Kalamazoo**

Future teachers are shown how to use NAEP methods and data to evaluate student progress in their own future classrooms. Education psychology classes at Western Michigan University study the reading objectives and reports on survey findings to examine differences in pupil performance among regions, levels of parental education, ages, sexes, races and size and type of communities. Seminar courses in "school and society" study in detail the methods, data, objectives and exercises.

### **University of Georgia, Athens**

Elementary and high school teachers attending the Association of Teacher Educators (ATE) summer workshop at the University of Georgia in Athens report they use NAEP materials from the social studies, reading and math assessment in their classes. The teachers note especially the usefulness of NAEP objectives and exercises as a reference in developing courses of study for their elementary and high school students. Curriculum development classes study NAEP data charts to make achievement level comparisons and examine practical applications of NAEP objectives and exercises.

## **Colgate University, Hamilton, N.Y.**

Student teachers and postgraduate teacher interns at Colgate University use NAEP objectives, exercises and findings to make comparison studies in their present training program. They are expected to apply this material later to their own classroom activities.

## **Syracuse University, New York**

The mathematics department faculty of Syracuse University uses NAEP materials to plan the freshman course of study. The faculty has examined NAEP math objectives and exercises and hopes to use NAEP math survey findings, which will be released in late 1974, to plan an effective instructional approach for heterogeneous student groups. The data will tell them what achievement level to expect of incoming freshmen given certain factors such as region, sex, color, parental education and size and type of community.

## **University of Illinois, Urbana**

Both English and education department faculties at the University of Illinois expose their students to NAEP materials developed for the 1969-70 writing assessment. Future teachers also examine NAEP data reports in writing that indicate how well 9-, 13- and 17-year-olds have mastered specific writing skills.

In other areas, members of the Association of Teacher Educators (ATE) were inspired by a program on NAEP to plan further presentations for their state organizations.

The Mississippi ATE, headquartered at the University of Southern Mississippi, Gulf Park, has scheduled a workshop for superintendents, principals, curriculum decisionmakers and deans on data use and model adaptation.

The University of Wisconsin College of Education, Eau Clair, is inviting educators and publishers to a presentation and workshop on NAEP findings and their possible uses.

## **NAEP—Present and Future**

Because NAEP is the first attempt ever made to provide objective data on a systematic national basis about the educational competencies of young Americans, it has broken new ground in education research.

The project annually examines a stratified random sampling of nearly 100,000 individuals, providing the only truly representative national sample of specific educational competencies.

The educational objectives on which the exercises are based include the judgments of lay people and scholars outside the education profession, providing educators with valuable information about public expectancies and hopes for education.

In addition to providing summary information about national and group achievement levels, NAEP reports both the actual answers of the participants and the exercises as they were presented in the assessments. This allows educators to examine the range of skill mastery, information and misconceptions which young Americans possess.

The project also has developed achievement measures for subject areas previously thought too complex or difficult for a large-scale testing program—writing, music, art and career and occupational development.

The "test items" used by NAEP are not exclusively multiple-choice or even paper-and-pencil tests. To measure effectively such things as skill mastery, ability to apply knowledge and attitudes, participants may be asked to write a letter, participate in a group discussion on a specific topic, draw a picture, sing a song or give their reactions to a film. These approaches also minimize the effect poor reading skills usually have on an individual's successful performance on tests in other subject areas.

To make the national survey data more useful, NAEP has begun work on two study efforts that may lead to long-range modifications in the project. The first is an effort to identify major influences on achievement such as school characteristics or family economic status. When these influences are defined, they will be considered for inclusion in NAEP surveys.

The second effort is a response to the education community's requests for more indepth analysis of assessment results. NAEP is studying the feasibility of refining its group performance comparisons so that, for example in addition to comparing achievement of 9-year-olds from the Northeast with 9-year-olds from the Southeast, comparisons could also be made between black 9-year-olds from two different regions. This additional level of information, educators believe, would be helpful in pinpointing educational trouble spots and in suggesting successful curriculum approaches.

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